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ABSTRACT

A study of 25 male college students (14 Native Americans, 11 Anglo Americans) assessed the role of culturally-differing communications behavior in the dropout rate of Native American students (while the students want an education, they also wish to retain their cultural identity, and equate class participation with assimilation into non-Indian culture: this leads to a strategy of interactional avoidance, which leads to educational failure). The students were divided into five smaller groups, each with a different proportion of Native American and Anglo American students: each group was given a puzzle needing information exchange for a solution. Group interactions were videotaped: the tapes were coded and submitted to various statistical techniques. Interactional avoidance behavior by Indian students was modified when they were placed in situations demanding communicative response: they responded, but in ways different from Anglo American students. Group interactions involving Indian students showed: (1) lower activity levels than a group containing only Anglo American students: (2) the importance of negotiation about socio-emotional and task differences: and (3) the significance of behavior change roles and compliance roles. The reasons why Native Americans fail as college students are complex and require more detailed analysis. Appendices contain the puzzle used and the coding manual. (MH)

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A DESCRIPTIVE STUDY OF INTERCULTURAL COMMUNICATION BETWEEN NATIVE AMERICAN AND ANGLO-AMERICAN COLLEGE STUDENTS

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November 10, 1980

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A DESCRIPTIVE STUDY OF INTERCULTURAL COMMUNICATION BETWEEN NATIVE AMERICAN AND ANGLO-AMERICAN COLLEGE STUDENTS

Intercultural research focusing on Native Americans and non-Indians in the classroom is complex and diverse. It takes poor academic performance as a cultural characteristic and seeks correlations among psychological, social, and cultural constructs. This approach yields insight into factors affecting intercultural communication and it leads to the development of education and counseling strategies designed to improve academic performance and communication in bi-cultural and multi-cultural settings.

The purpose of this study is to determine how Native American and Anglo-American college students differ in their patterns of communication behavior and how these two groups adapt or fail to adapt to each other's behavior when placed in an intercultural communication condition. Research outlines significant variables related to Native American communication and educational success, but it has not specifically considered communication interaction as a means of describing the composition and patterning of behaviors as they may be related to education.

Rationale

The situation at the University of Oklahoma and at other institutions with significant Indian enrollments demonstrates the challenge facing educators and the need for intercultural communication research. Despite the time and effort of many educators the general experience of Native American students has been negative. A survey conducted at the University of Oklahoma (Carney, 1978, 1979) reveals a combined dropout rate for Indian men and women of 63 percent. The attrition rate for Indian women alone is 78 percent. The survey also reports lower grade point averages for Native Americans than for their non-Indian counterparts; thirty-seven percent accumulated a grade point average of less than 2.0 on a 4.0 scale.

The situation is not limited to any particular institution, age, sex, or tribe. On a nationwide basis McDonald (1978) estimates that the college dropout rate may be as high as 93 percent. Kohout and Kleinfield (1974) note similar findings.

Three very general explanations for this phenomenon exist. One blames the environment created by educational institutions and the second argues that culturally based differences between Indians and non-Indians are responsible. The third suggests that it is the conflict between cultures which accounts for educational failure. All three highlight

the issues and constructs important to a proper understanding of intercultural communication in educational settings.

Critics of educational institutions (McDonald, 1978; Thompson, 1978; Carroll, 1978) emphasize that the classroom requirements, dormatory facilities, and class offerings are diametrically opposed to Indian cultural needs and values. Indian students who attend colleges and universities are confronted with an environment that is bewildering and frustrating. The gulf between the expectations of the educational environment and those of the students's tribe seem insurmountable, thus creating an unbearable atmosphere which leads to classroom failure. Recommendations vary; they include demands for more and better Native American studies programs and serious challenges to the utility of Anglo education for students of Indian descent.

The second perspective presumes that educational institutions are sound. This position advances the hypothesis that Indian students lack certain traits, skills, dispositions, or attitudes which are required for success. For example Native American students have been shown to be less motivated (Query, Query, and Singh, 1977), less intelligent (Church, 1977, 1976), and exhibit lower scores on various self-concept measures (Mason, 1969; Martin, 1978; Senior, 1974). These cultural differences presumably destine some Indian students to failure.

The third explanation argues that neither the institutional or person deficiency perspectives offer complete explanations (Lujan, Kennan, Hill, and Long, 1979; Carroll, 1979). This position suggests that contradictions exist in the literature which can not be fully explained by either perspective. For example, although grade point averages are low and dropout rates high, mean ACT scores for Indian college students do not exhibit the kind of variation (when compared to non-Indian populations) required to predict the high degree of educational failure experienced by Indians (Carney, 1979, 1978). In addition, Lujan et al. compared PRCA scores (McCroskey, 1970)[1] and classroom behavior[2] and found that although students exhibited many of the behavioral characteristics of communication apprehension the PRCA instrument did not reveal scores significantly different from previously established norms.

These findings suggest that Native American behaviors may represent an intercultural communication strategy devised as a response to the environment rather than an indication

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[1]Communication apprehension is a psychological construct which refers to an "anxiety syndrome associated with either real or anticipated communication with another person or persons (McCroskey, 1977, p. 28)." McCroskey's twenty item instrument was employed in this investigation.

[2]This study identified five Native American behavior categories which are characteristic of communication apprehension: complete physical withdrawal from the learning environment, non-participation in classroom discussions, refusal to respond to direct questions, time spent communicating, and eye contact.

of communication apprehension. Carroll (1978) makes a key observation by noting that even presumably good students may participate in disruptive behaviors and may seek to achieve at a reduced level in order to maintain their Indianness. Lujan et al. and Carroll raise the possibility that educational failure may be due only in part to the institution and cultural differences, and that the communication interaction between members of Indian and non-Indian cultures and the meanings drawn from such situations lead to the behaviors observed in the literature.

In offering this tentative hypothesis Lujan et al. argue that two key points must be kept in mind. First, the educational environment is one in which assimilation occurs; that is, where Indian students learn non-Indian culture. Second, college students and Native Americans in particular are seeking a sense of self-identity. For Indian students, however, personal identity is drawn from outside the university environment.

Indian students, thus, must deal with serious conflicts between their quest for self-identity and education. The institution is distinctly non-Indian while the orientation of the student is tribal. This conflict creates a dilemma for the student: active participation implies assimilation into non-Indian culture. However, non-participation leads to educational failure, and thus a paradox for Indians in cultural interface situations.

The conflict between education and Indianness results in a particular communication response. Lujan et al. describe this response as a strategy of interactional avoidance. Its purpose is to maintain a balance between education and Indianness. By avoiding interaction, Indian students assume that they are thwarting assimilation and protecting their Indianness. If the strategy functions well, this dilemma need not be directly confronted. Unfortunately, this strategy leads to educational failure in the majority of cases.

Current research interpreted along these lines suggests that there exists a complex repertoire of communication behaviors designed as an intercultural communication strategy. A communication perspective which illuminates the functioning of communication in the educational environment may clarify the notion of a strategy of interactional avoidance and it may help to integrate the institutional and person deficiency models into a more comprehensive explanation.

Carroll (1978) and Lujan et al. (1979) identify some useful features of Native American communication behaviors. These studies are, however, only preliminary in nature. Although they offer useful insight neither directly analyzes communication interaction and neither specifically addresses the issues discussed above.

Although researchers have yet to analyze communication as a means of exploring the basis for educational failure

among Native Americans two general research questions can be derived:

1. How do Native American college students differ in their patterns of communication behavior from Anglo-Americans?

2. How do Native Americans and Anglo-Americans adapt or fail to adapt to each other's patterns of communication behavior when placed in an intercultural interface situation?

These research questions are descriptive. They reflect a concern for communication as a means of assigning meaning to events and objects, and they also recognize that through communication individuals develop modes of behavior based on those meanings. These questions are designed to produce answers which shed light on how meanings and modes of behavior evolve in intercultural communication.

Method

Participants

Subjects for this study were twenty-five male college students at the University of Oklahoma. All were enrolled in the fundamentals course (1113 Principles of Communication) and each held freshman or sophomore status. All subjects were selected on a voluntary basis.

All subjects in this study were male. Although the research in this area is incomplete, there is reason to believe that important differences exist between the

communication of male and female Native American students (Cummings and Renshaw, 1979). The interaction between males and females injects a variable which is difficult to control. Although sex differences may be of interest at a later date, control requirements made it necessary to limit the study to male students.

The Native American subjects were selected from Southern Plains tribes (Kiowa, Commanche, Caddo, etc.). Despite the belief that Native Americans are forming a new ethnic group called the "American Indian" (Thomas, 1972; Oswalt, 1966), the fact remains that there are fundamental differences between tribal groups (Wax, 1971).

Setting

The small group served as the context for study. Educational failure is most often studied in the classroom, however, proponents of the institutional deficiency, person deficiency, and cultural conflict perspectives all suggest that the behavior which leads to failure is observable in a variety of situations within the educational institution. Such situations most certainly include, but need not be limited to, the classroom.

The composition of the four groups analyzed is as follows:

Group I: Five Native Americans.

Group II: Four Native Americans and one Anglo-American.

Group III: Three Native Americans and two Anglo-Americans.

Group IV: Two Native Americans and three Anglo-Americans.

Group V: Five Anglo-Americans.

Task

Each group was asked to participate in a problem solving discussion. The task was a small group problem solving exercise frequently employed in the fundamentals course (Communication 1113, Principles of Communication) at the University of Oklahoma. The group project took the form of a puzzle in which each individual was presented with information about the solution. That information was not available to other group members. The nature of the project was such that the correct solution could be determined only through a free exchange of information and ideas (see Appendix A).

Data Analysis

Each of the discussion groups was video-taped. The interactive data was coded according to the functional communication assessment model discussed by Long (1979) and Cummings, Long and Lewis (1980) (see Appendix A). The first hour of interaction from each group was analyzed. Data was classified by two coders working from the video-taped interaction. Inter-coder reliability was calculated via Spearman's Rho. The reliability coefficients ranged from rho= .80-1.00($p \geq .0001$).

The data was coded according to ten segments each six minutes in duration. If the recorded interaction was less than one hour, the data was divided evenly into ten segments. The selection of these particular time segments was arbitrary, but they were designed to allow an analysis of the interaction across time. No previous research indicated what time segments were appropriate.

The coded data was transformed into rank order data and was submitted to multiple discriminate analysis (Klecka, 1975).

Results

Identifying Cultural Differences

Multiple discriminant function analysis, employing Wilks Lambda as a selection criterion, was employed to construct a linear combination of variables that would provide some basis for distinguishing the two cultures. The results of that analysis are reported in Table I.

TABLE I
(Discriminant Analysis Predicting Culture)

Summary Table

Step Entered	Variable	Wilk's Lambda	Significance
1	RCTSKIN	.77	.01
2	SOSEID	.59	.003
3	SOSEWL	.50	.002
4	RCTSKPI	.39	.0005
5	SOSEIG	.34	.0006
6	SOTSKPI	.29	.0005
7	SOSEWW	.26	.0005

Summary Table Cont'd.

8	RCTSKWL	.23	.0006
9	RCSEIN	.21	.001
10	RCSOEPI	.17	.0007
11	RCSESTR	.14	.0007
12	SOTSKWL	.11	.0005
13	SOSELL	.09	.0007

Canonical Discriminant Function

Function	Eigenvalue	Pct. of Var.	Cum. Pct.	Canonical Corr.
1	9.47	100.00	100.00	.95

Standardized Canonical Discriminant Function Coefficients

	Function I
SOTSKPI	1.11
RCTSKPI	-1.74
RCSOEPI	1.27
RCSESTR	1.94
SOSEIG	.87
SOTSKWL	.86
SOSEWL	-8.24
SOSELL	9.41
SOSEWW	-2.10
RCTSKWL	2.01
SOSEID	1.36
RCTSKIN	-1.50
RCSEIN	-2.22

Classification Results

Actual Group	No. of Cases	Predicted Group Membership 1	2
Indian	14	14 100%	0 0.0%
Anglo	11	0 0.0%	11 100.0%

The results to be found in Table I indicate that a linear combination of thirteen variables predicts cultural membership with 100% accuracy. The canonical r_c= .95 (p .0002) indicates the strength of the relationships. The direct

implication is simply that Native American and Anglo-American college students do differ in terms of their symbolic behavior. The results of this procedure suggest that they differ most significantly in terms selected information exchange, problem identification, and behavior change roles.

Adjustments to Intercultural Situations

One of the objectives of this study was to determine if the communication behavior of participants changed according to situational requirements. Sarbaugh (1980) argues that communication ranges along a continuum from intracultural to intercultural. That is, the nature of the interactive setting ought to require changes in communication behavior. Thus, one would expect a group composed entirely of Native American students to show adjustments in symbolic activity that would distinguish it from a group composed entirely of Anglo-American students, and so on.

This issue was explored by submitting the variables observed in this study to discriminant function analysis in order to determine if they could be combined to predict group and cultural membership. If successful the results should indicate dimensions or variables which are most sensitive to situational variation. The results of that analysis are summarized summarized in Table II.

TABLE II
(Discriminant Analysis Predicting Group and Culture)

Summary Table

Step Entered	Variable	Wilk's Lambda	Significance
1*	RCSECM	.009	.0000
2*	RCTSKWW	.0001	.0000
3*	RCSEID	.000006	.0000
4	SOSEWL	.000001	.0000
5*	RCTSKLL	.000000	.0000
6*	SOSECM	.000000	.0000
7*	RCTSKCM	.000000	.0000
8*	SOTSKCM	.000000	.0000
9*	SOTSKIA	.000000	.0000
10*	RCSEIA	.000000	.0000
11*	RCTSKID	.000000	.0000
12	RCSOEPI	.000000	.0000
13*	SOSOEPI	.000000	.0000

Canonical Discriminant Functions

Function	Eigenvalue	Pct. of Var.	Cum. Pct.	Canonical Corr.
1	60765.03	90.36	90.36	.999999
2	6253.44	9.30	99.66	.999999
3	143.79	.21	99.88	.996541
4	56.78	.08	99.96	.991310
5	25.21	.04	100.00	.980734
6	1.69	.00	100.00	.792356
7	.15	.00	100.00	.366687

Standardized Canonical Discriminant Function Coefficients

	Fun1	Fun2	Fun3	Fun4	Fun5	Fun6	Fun7
SOSOEPI	4.39	7.55	1.68	.28	.54	.93	1.18
RCSOEPI	5.75	8.72	3.49	-.31	.08	-1.81	-.23
SOTSKIA	4.65	5.45	1.87	2.44	1.50	1.49	.20
RCSEIA	-1.55	-.51	.43	-.37	-.65	.65	.68
SOSEWL	-24.95	16.47	4.57	-2.40	.92	-.26	.91
RCTSKLL	-8.09	-6.81	2.73	.06	-1.25	-1.13	-.08
RCTSKWW	2.80	-7.75	-1.33	.85	.67	.46	.33
SOTSKCM	10.37	-3.52	-7.49	-.82	1.74	1.09	-.32
SOSECM	3.93	4.15	7.32	3.18	.13	.29	.37
RCTSKCM	28.51	-8.40	-9.75	-.83	1.55	.83	-1.77
RCTSKID	-3.98	-6.44	-.73	.39	-1.30	.13	-.00
RCSECM	2.55	2.67	1.52	-.87	-1.34	-.71	1.00
RCSEID	-1.59	-2.54	-2.50	2.18	.27	.46	.43

Again the communication variables employed in this study work remarkably well in predicting group membership (100%). Thirteen variables were identified in the analysis as being particularly relevant in discriminating between groups and cultural membership. The canonical correlation for each discriminant function (r_c=.99-1.00) indicates the strength of the relation between the discriminating variables and the nominal categories culture and group membership.

These results can be compared to the previous multiple discriminant analysis to clarify the effects produced by adjustments to the situation. Those variables which appeared in the analysis of groups and cultural membership (Table II) but which do not appear in the previous analysis (Table I) indicate dimensions along which situational adjustments are made (those variables are indicated in Table II by an asterik). Only two variables overlap indicating that situational adjustments are made that are distinct from cultural effects and that those adjustments center around negotiation roles and behavior change roles (especially those involving compliance).

The Process of Intercultural Communication

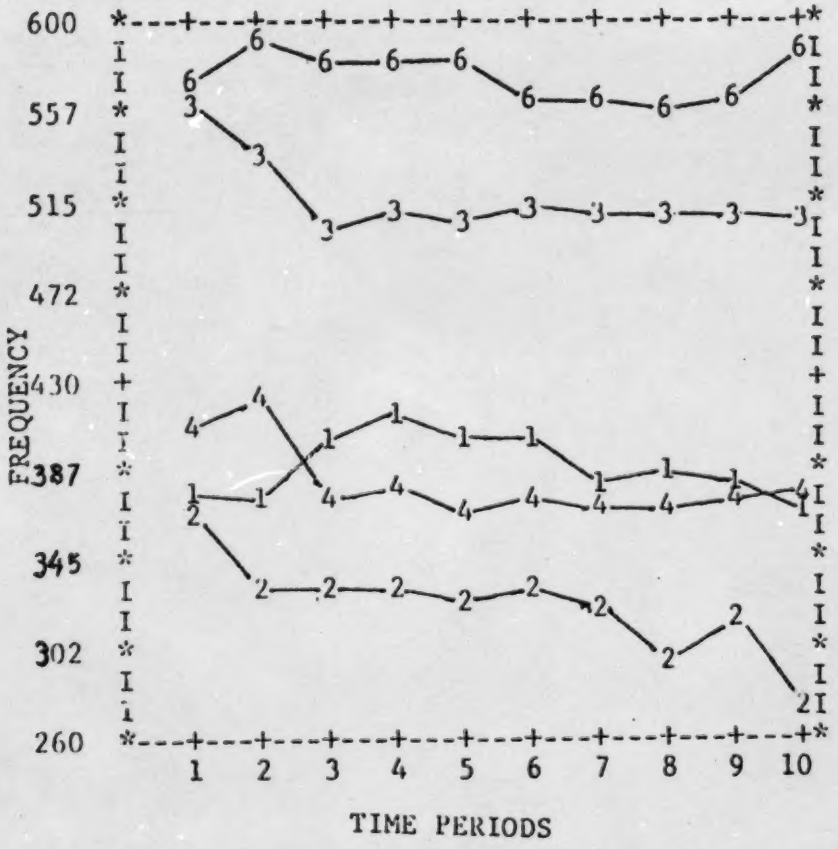
The results of the discriminant function analysis indicate at one level that the situational nature of communication gives rise to adjustments in symbolic activity in addition to purely cultural differences. The dimensions

identified in the previous analysis indicate in a general way the results of the negotiation process involved in intercultural communication, and the dimensions which ought to vary most significantly over time.

Of considerable interest to this study is the ebb and flow of communication over time. The description of pertinent aspects of that process was accomplished in two ways. First, the overall activity level of each group was plotted against time, and second, the levels of activity in terms of the four functional categories were plotted against time for each group. All the graphs were constructed through a linear combination of variables. The overall activity level is simply a composite of all variables representing all four functional categories for each group. That data is represented in Figure I.

The results of Figure I suggest two points: first, the density of interaction in those groups containing Native Americans is clearly less than the group composed entirely of Anglo-Americans. Second, while the interaction in the group containing five Anglo-Americans remains generally consistent over time, the density of interaction in groups containing Native Americans generally begins at lower levels and decreases over time. The results indicate that the process whereby Native Americans and Anglo-Americans adjust to their interactive situations occurs differently than in the group composed entirely of Anglo-Americans. In general, that

FIGURE I
(Group Activity Level vs. Time)



process involves reduced levels of interaction, and further restrictions over time.

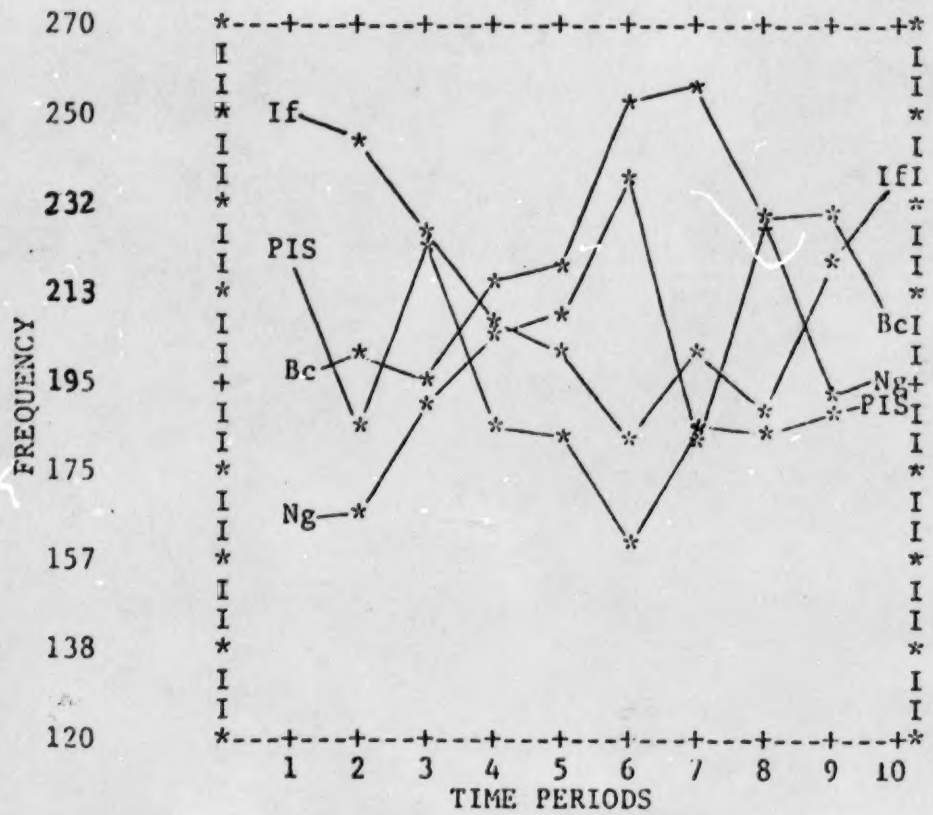
Finally, the process of intercultural communication was defined by looking directly at the functional categories (information sharing, problem identification-solution, negotiation, and behavior change) as they were distributed over time. This procedure allowed a clarification of Figure I. Graphs of each group are presented in Figure II. Each graph contains plots for each functional category across the ten time segments. The value of each category is simply a composite of all scores in that category.

These five graphs indicate the process of intercultural communication in terms of the four functional categories observed in this study. The graphs suggest four findings in particular.

First, information exchange activity remains fairly constant across time. That is, communication conducted interculturally requires a fairly stable level of information exchange. Second, in general, groups containing Native Americans exhibit lower levels of problem solving activity than the group composed entirely of Anglo-Americans. In addition, problem solving activity appears to increase or peak when levels of negotiation level off or decrease. Third, groups containing Native Americans tend to exhibit higher levels of negotiation activity than the group containing Anglo-Americans. Fourth, behavior change roles increase

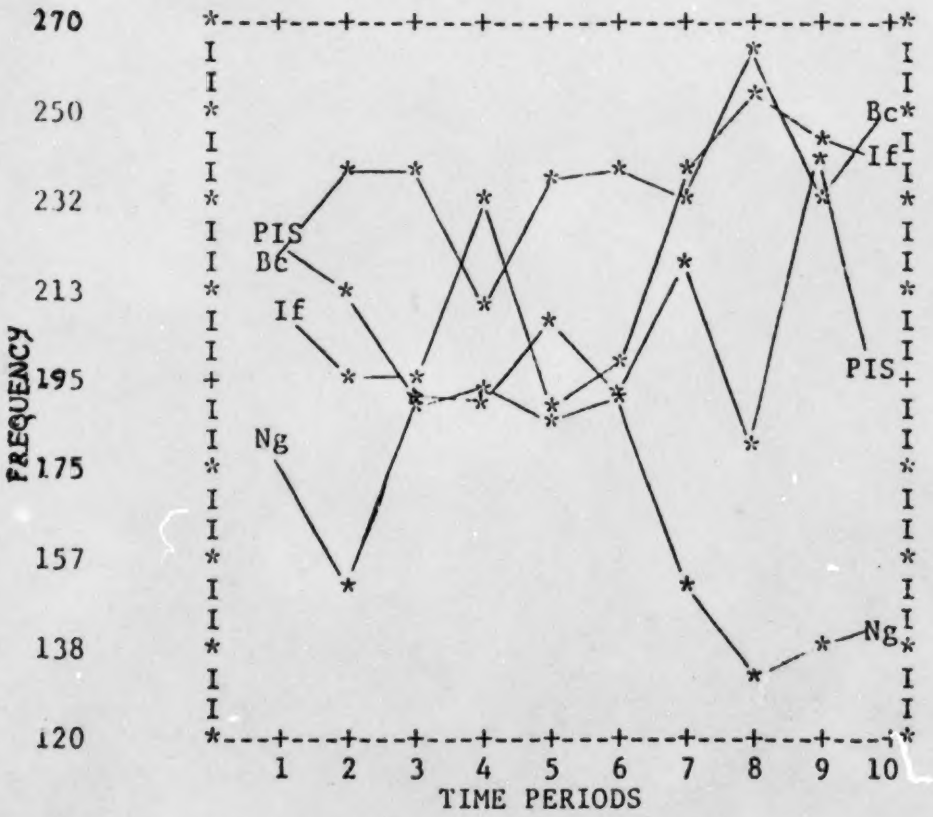
FIGURE II
(Graphs of Functional Communication Behavior)

Group I (Five Native Americans)*

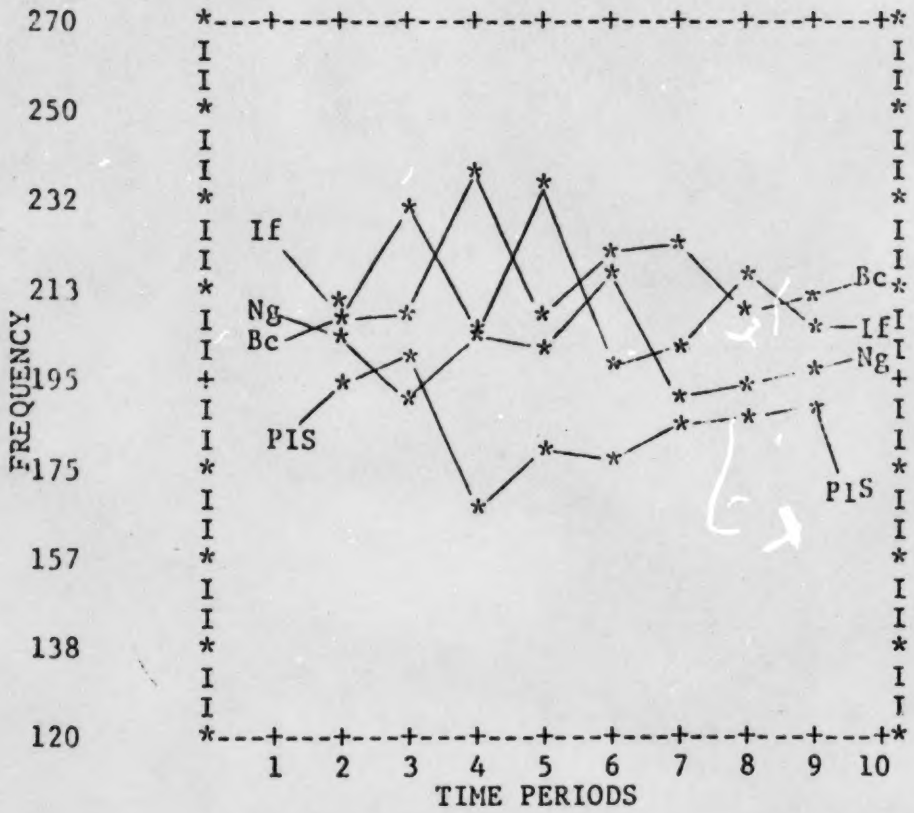


*The identifying codes for all graphs in Figure II are: If-Information Exchange, PIS-Problem Identification-Solution, Ng-Negotiation, Bc-Behavior Change.

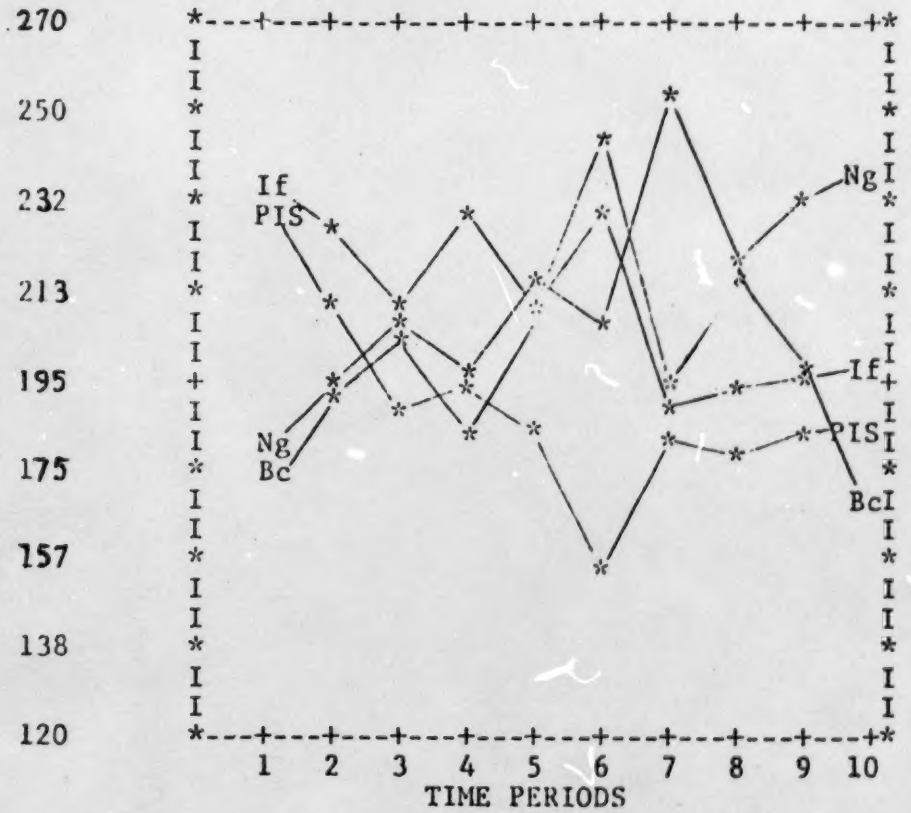
Group II (Four Native Americans-One Anglo-American)



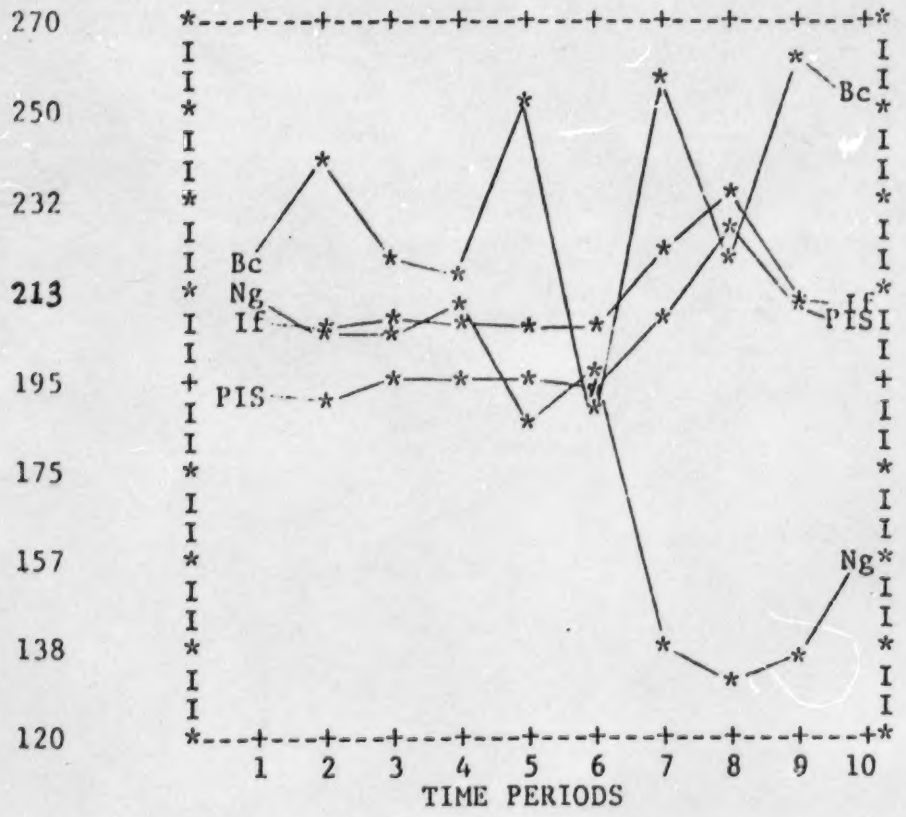
Group III (Three Native Americans-Two Anglo-Americans)



Group IV (Two Native Americans-Three Anglo-Americans)



Group V (Five Anglo-Americans)



across time in all groups as negotiation activity levels off or decreases. As one might suspect these results support the centrality of negotiation as a key process in intercultural communication. That is, until negotiation is completed or until negotiation of specific issues, problems and solutions is completed other functional roles must generally remain secondary.

Discussion

The results of this study are consistent with the cultural conflict perspective on Native American educational failure. Briefly, that perspective argues that culture, institution, and a variety of other factors combine to create an untenable situation for Indian students. On the one hand, Indian students wish to maintain their cultural identity, but they also realize that education entails acculturation; that is, a loss of Indian values and attitudes, and an internalization of the culture which surrounds them. The result is a strategy of interactional avoidance the general characteristics of which have been discussed above.

The results, however, suggest at least one modification in the cultural conflict perspective. Native American students do tend to avoid interaction when possible, but when placed in situations which demand some communicative response they do so. However, the ways in which they choose to communicate appear to be different from behavior exhibited by Anglo-

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Americans (Table I) and their presence affects group performance (Table II). Rather than generalizing that Indian communication behaviors represent a "strategy of interactional avoidance" it is more accurate to say that the avoidance response is employed when situationaly appropriate (that is, it represents one dimension of a Native American repetoire of behaviors). However, when verbal responses are required Native Americans exhibit a particular pattern of communicative activity. The central question then becomes: what are the features of that approach to intercultural communication and how does it affect the process of communication itself?

One is immediately struck by the differences in level of interaction when viewing the results. Differences between groups containing Native Americans and the single group composed entirely of Anglo-Americans are obvious (Figure I). Although there are aspects of each group which are unique there appears to be some general influence on group performance associated with the presence of Native Americans. The groups containing Native Americans operated at lower activity levels and required longer periods of time to complete the task. In fact, the more Indian students in the group the longer the period of time required to reach a solution.*

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*The times required for task completion are: Group I (Five Native Americans) -55.00, Group II (4 Native Americans-1 Anglo-American) -46.00, Group III (3 Native Americans-2 Anglo Americans) -46.30, Group IV (3 Anglo Americans-2 Native Americans)-34.44, and Group VI (5 Anglo-Americans)-26.15.

The implication is that the presence of Native Americans involves an impact on group interaction aside from the unique features of each group. This Native American strategy seems to impact most directly on the interaction levels of the groups and the time required to complete tasks.

It ought to be made clear that the term "impact" is not intended to convey any notion of causality, at least in the sense normally associated with the term. The fact that Native Americans are present in these groups does not imply that they "cause" the patterns of communication discussed above and those still to be examined. What can be said is that the presence of Native Americans requires intercultural communication, and that one of the initial requirements of it is the negotiation of the basis for future communication. Thus, participants determine how task and socio-emotional considerations will be handled. The results of that process set the stage for the observations discussed in this study. Accordingly, the presence of Native Americans may be a sufficient but not a necessary condition for these observations.

The centrality of negotiation in every form of analysis is an important finding. There exists a natural uncertainty regarding how individuals ought to respond to each other. That uncertainty is reduced through the negotiation of both socio-emotional and task differences.

Thus, to the extent that uncertainty exists and must be reduced negotiation roles will become of great significance while other roles assume secondary status. The prominence of negotiation roles could easily stand above that required just for task resolution in a culturally homogenous group, explaining why the culturally heterogenous groups in this study required longer periods of time to achieve solutions.

The plots of communication process (Figure II) add to this discussion. One finding of particular interest is that negotiation roles exhibit considerable variation and often dominate in inter-cultural groups (I, II, III, IV) when compared to the much lower level observed in Group V (Five Anglo-Americans). The implication is that groups composed of Native American and Anglo-American students must spend time negotiating the basis for task and socio-emotional activity, and that other communication functions tend to play secondary roles while negotiation proceeds. Only after negotiation has been completed do other functions become of more importance. When further negotiation is required those roles again tend to increase while the other three categories decrease.

As one would expect Group V (Five Anglo-Americans) contrasts sharply in terms of these processes. In that group negotiation activity decreases across time giving way to other functional activities. In groups that are culturally homogenous less negotiation is required, thus the group may move more directly to the solution of the task.

The prominence of behavior change roles is another significant feature of the observed interaction. The significance of this functional category isn't surprising when one considers its relation to negotiation roles. An examination of Figure II indicates an inverse relation between negotiation and behavior change roles. That is, as negotiation is completed behavior change roles become more significiant. Perhaps, as groups negotiate the basis for future communication behavior change is employed to insure compliance with those rules.

What is of particular interest is the significance of compliance roles (Table II). The question is, why is the result of negotiation an emphasis on compliance as a method for behavior change? Unfortunately, that question can not be adaquately answered given the design of this study. However, it is worthwhile to speculate a bit. One explanation is simply that because negotiation requires significant amounts of time and energy throughout a group's history individuals resort to compliance as a means of expediting the group's work. Thus, compliance may simply represent an attempt to mediate the negotiation process and turn the attention of the group to the task.

Before concluding this discussion it is important to summarize the findings in relation to the two research questions. First, the results suggest that there are differences in the communication behavior of Native Americans

and Anglo-Americans. In addition, the Native American strategy seems to impact on the patterns of interaction observed in the groups of which they were members. That influence helps to describe how Native American and Anglo-American students adjust on some levels and fail to adjust on others. In this regard, the findings indicate that participants attempt to adjust to their interactive situations through an emphasis on negotiation. Difficulties in the adjustment process are manifested as lower levels of interaction, longer periods of time required to accomplish tasks, and an emphasis on compliance roles.

Summary

These findings suggest that differences between these two cultures do exist, that participants attempt to adjust through a process of negotiation, but that the negotiation process is not entirely successful. These results do not pretend to explain why Native Americans fail as college students. It is clear from the results that the processes involved are complex and require more detailed analysis. The results, however, do clarify some of the basic issues regarding their communicative approach to educational settings. The results also suggest some features of that intercultural communication strategy which may be dysfunctional.

APPENDIX A

Each group member received various pieces of this puzzle. Some of this information was shared and some was not. The participants were asked to answer two questions: Who owns the zebra? Who drinks water? They were asked to reach consensus before adjourning.

Information:

The green house is immediately to the right (your right) of the ivory house.

The Englishman lives in the red house.

Kools are smoked in the house next to the house where the horse is kept.

Coffee is drunk in the green house.

The Spainard owns the dog.

The Norwegian lives in the first house on the left.

The Lucky Strike smoker drinks orange juice.

The Norwegian does not own the zebra.

The Japanese smokes Parliaments.

The Norwegian lives next to the blue house.

The Old Gold smoker owns snails.

Kools are smoked in the yellow house.

Milk is drunk in the middle house.

The man who smokes Chesterfields lives in the house next to the man with the fox.

The milk drinker owns snails.

The man who owns the fox lives next to the man who owns the horse.

The Ukranian drinks tea.

THERE ARE FIVE HOUSES, EACH OF A DIFFERENT COLOR AND INHABITED BY MEN OF DIFFERENT NATIONALITIES, WITH DIFFERENT PETS, DRINKS AND CIGARETTES.

APPENDIX B

Coding Manual

Source Roles--A source role is said to occur when an actor produces symbols, oral or written. This definition is limiting in that it does not include nonverbal symbols.

Receiver Roles--A receiver role is said to occur when an actor "consumes" symbols, oral or written, by reading or listening to a message.

Task Roles--A task role is said to occur when an actor is a source or receiver of symbols, the content of which is about work. When actors symbolize their work experience, they often refer to such content information as how to fill out forms, how to hold a two-by-four in place for construction, or how to mix concrete. This is task information, and actors who symbolize in this way are using the communicative role of work.

Socio-emotional Roles--A socio-emotional (or person) role is said to occur when an actor is a source or receiver of symbols, the content of which is about psychological needs and goals. This communicative role involes expressing how we feel about our work, how much we like or dislike others, or how much of a raise we hope to get next year.

Information Asking Roles--An information asking role occurs when one asks questions about other people's experiences. For example, one might ask for information about solutions to problems, differences of opinion, how to perform certain tasks, etc.

Information Giving Roles--An information giving role occurs when one makes assertions, or indicative statements, about one's own experience. For example, one might give information about solutions to problems, differences of opinion, the performance of certain tasks, etc.

Problem Identification Roles--Problem identification roles occur when an actor gives or asks for information about the nature and scope of a problem. For example, individuals discover that some problem or difficulty exists, and then seek to isolate and define the problem.

Solution Identification Roles--Solution identification roles occur when an actor gives or asks for information about possible solutions to a problem. For example, individuals suggests possible solutions, examine them against a list of criteria, and implement the best solution.

Win-Lose Roles--A win-lose negotiation role occurs when actors identify solutions to problems in advance, and advocate one solution over all others. This involves a winner-take-all strategy. In this case one individual seeks to win as much as possible (gain acceptance for their position), and so that the other participants lose as much as possible (do not gain acceptance for their position).

Lose-Lose Roles--A lose-lose negotiation role occurs when actors identify solutions to problems in advance, and employ a strategy of compromise where each person accepts a lower quality solution than they originally desired. In this case, individuals seek to win only part of their advocated position (gain acceptance for only part of their solution) in order that another part may be accepted).

Win-Win Roles--A win-win negotiation role occurs when advocacy of a particular solution is dropped, and individuals seek undetermined solutions to problems. Thus, the objective is to find solutions which satisifies the requirements of all participants without advocacy or "hidden agendas".

Compliance Roles--A compliance role occurs when an actor uses symbols representing rewards and punishments to achieve behavior change. An individual adopts specific behaviors because he/she expects to gain specific rewards or approval and avoid specific punishments or disapproval.

Identification Roles--An identification role occurs when an actor uses symbols representing a mutual liking relationship to achieve behavior change. When an individual accepts influence he wants to establish or maintain a satisfying self-defining relationship to another person or grou. He/she adopts the induced behavior because it is associated with the desired relationship.

Internalization Roles--An internalization role occurs when an actor uses symbols representing logic and reason to achieve behavior change. When an individual accepts influence because the content of the induced behavior--the ideas and actions of which it is composed--is intriniscally rewarding. He/she adopts the induced behavior because it is congruent with his/her value system. Behavior adopted in this fashion tends to be integrated with the individual's existing values.

COMMUNICATION ROLE MATRIX

SOURCE

Task

_____ Information-Giving
_____ Information-Asking
_____ Problem-Defining
_____ Solution-Trial
_____ Win-Lose
_____ Lose-Lose
_____ Win-Win
_____ Compliance
_____ Identification
_____ Internalization

Socio-Emotional

_____ Information-Giving
_____ Information-Asking
_____ Problem-Defining
_____ Solution-Trial
_____ Win-Lose
_____ Lose-Lose
_____ Win-Win
_____ Compliance
_____ Identification
_____ Internalization

RECEIVER

Task

_____ Information-Giving
_____ Information-Asking
_____ Problem-Defining
_____ Solution-Trial
_____ Win-Lose
_____ Lose-Lose
_____ Win-Win
_____ Compliance
_____ Identification
_____ Internalization

Socio-Emotional

_____ Information-Giving
_____ Information-Asking
_____ Problem-Defining
_____ Solution-Trial
_____ Win-Lose
_____ Lose-Lose
_____ Win-Win
_____ Compliance
_____ Identification
_____ Internalization

CODING INSTRUMENT

Problem Identification/Solution Coding Form Segment _____

Source Roles/Task

	1	2	3	4	5
Problem Identification					
Solution Identification					

Source Roles/Socio-emotional

	1	2	3	4	5
Problem Identification					
Solution Identification					

Information Exchange Coding Form Segment _____

Source Roles/Task

	1	2	3	4	5
Information Asking					
Information Giving					

Source Roles/Socio-emotional

	1	2	3	4	5
Information Asking					
Information Giving					

Negotiation Coding Form Segment _____

Source Roles/Task

	1	2	3	4	5
Win-Lose					
Lose-Lose					
Win-Win					

Source Roles/Socio-emotional

	1	2	3	4	5
Win-Lose					
Lose-Lose					
Win-Win					

Behavior Change Coding Form Segment _____

Source Roles/Task

	1	2	3	4	5
Compliance					
Identification					
Internalization					

Source Roles/Socio-emotional

	1	2	3	4	5
Compliance					
Identification					
Internalization					

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